



LITAF gene

lipopolysaccharide induced TNF factor

Normal Function

The *LITAF* gene (sometimes referred to as *SIMPLE*) provides instructions for making a protein called lipopolysaccharide-induced tumor necrosis factor-alpha factor. The role of this protein is unclear, but two functions have been proposed. The LITAF protein probably plays a role in processes that fight infection and destroy unwanted cells. Specifically, this protein is thought to activate the production of an infection-fighting substance called tumor necrosis factor-alpha. Tumor necrosis factor-alpha may also participate in the destruction of cancer cells.

Another function of the LITAF protein was proposed on the basis of its location within the cell. It is found in the membrane surrounding lysosomes, the sac-like compartments in cells that are filled with enzymes to break down toxic substances, digest bacteria that invade the cell, and recycle worn-out cell components. The LITAF protein may help bring proteins and other substances into the lysosomes to be broken down.

Health Conditions Related to Genetic Changes

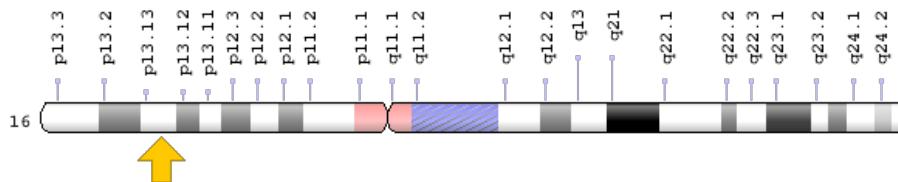
Charcot-Marie-Tooth disease

At least eight mutations in the *LITAF* gene cause a form of Charcot-Marie-Tooth disease known as type 1C. Each of these mutations changes a single DNA building block (base pair), which alters the instructions for making the LITAF protein. It is unclear how these mutations lead to type 1C Charcot-Marie-Tooth disease. The abnormal LITAF protein may mistakenly degrade proteins that are critical for nerve function. Another possibility is that the altered LITAF protein cannot destroy substances that are toxic to nerve cells.

Chromosomal Location

Cytogenetic Location: 16p13.13, which is the short (p) arm of chromosome 16 at position 13.13

Molecular Location: base pairs 11,547,722 to 11,636,377 on chromosome 16 (Homo sapiens Annotation Release 108, GRCh38.p7) (NCBI)



Credit: Genome Decoration Page/NCBI

Other Names for This Gene

- CMT1C
- FLJ38636
- lipopolysaccharide-induced TNF factor
- LITAF_HUMAN
- LPS-induced TNF-alpha factor
- PIG7
- SIMPLE
- small integral membrane protein of lysosome/late endosome
- TP5317
- tumor protein p53 inducible protein 7

Additional Information & Resources

Educational Resources

- The Cell A Molecular Approach (second edition, 2000): Lysosomes
<https://www.ncbi.nlm.nih.gov/books/NBK9953/>

GeneReviews

- Charcot-Marie-Tooth Neuropathy Type 1
<https://www.ncbi.nlm.nih.gov/books/NBK1205>

Scientific Articles on PubMed

- PubMed
<https://www.ncbi.nlm.nih.gov/pubmed?term=%28LITAF%5BALL%5D%29+OR+%28LPS-induced+TNF-alpha+factor%5BTIAB%5D%29+AND+%28%28Genes%5BMH%5D%29+OR+%28Genetic+Phenomena%5BMH%5D%29%29+AND+english%5Bla%5D+AND+human%5Bmh%5D+AND+%22last+3600+days%22%5Bdp%5D>

OMIM

- LIPOPOLYSACCHARIDE-INDUCED TUMOR NECROSIS FACTOR-ALPHA FACTOR
<http://omim.org/entry/603795>

Research Resources

- Atlas of Genetics and Cytogenetics in Oncology and Haematology
http://atlasgeneticsoncology.org/Genes/GC_LITAF.html
- ClinVar
<https://www.ncbi.nlm.nih.gov/clinvar?term=LITAF%5Bgene%5D>
- HGNC Gene Symbol Report
http://www.genenames.org/cgi-bin/gene_symbol_report?q=data/hgnc_data.php&hgnc_id=16841
- Inherited Peripheral Neuropathies Mutation Database
<http://www.molgen.ua.ac.be/CMTMutations/Mutations/Mutations.cfm?Context=22>
- NCBI Gene
<https://www.ncbi.nlm.nih.gov/gene/9516>
- UniProt
<http://www.uniprot.org/uniprot/Q99732>

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